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1962 - 1963

Report of

Plant Materials in Indiana

by

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1962 - 1963 Report of the Plant Materials Technician

During 1963 the Plant Materials Technician observed plantings in selected areas. The primary objective was to become familiar with problems peculiar to Indiana and to evaluate as many plantings as possible. Emphasis has been placed on closing out those plantings which are not adding to our knowledge of these plants and their management. In most cases the Plant Materials Technician will attempt to observe and evaluate the planting unless it is an obvious failure. It will not be possible to evaluate all plantings or even to be in all areas each year. For this reason some plantings will be retained on the record for a period beyond their normal useful life.

A limited number of new plantings are planned. As compared to past plantings, these will usually be limited to one test material which has been previously tested and appears promising at a Plant Materials Center and a standard for comparison. The standard will normally be that material which is shown in the Technical Guide as the material commonly available for the site or problem area.

The status of the Field Planting program in Indiana is summarized as follows:

Establishment of New Field Plantings

A few of the new plantings made in 1962 and 1963 are shown in the list of active plantings. These are the ones for which establishment or evaluation reports have been prepared and forwarded to the Plant Materials Technician.

The following list of seed and plants furnished indicates that many plantings must have been made for which there was no follow-up in the form of establishment reports. For this reason it is assumed that the list of active plantings is incomplete in this respect. An attempt will be made to

secure additional information on these plantings.

Seed Furnished by the SCS (Pounds)

<u>Accession Number</u>	<u>Common Name</u>	1962		1963		<u>Total</u>
		<u>SCD</u>	<u>Other*</u>	<u>SCD</u>	<u>Other</u>	
Mich-421	Autumn olive				5	5
	Bird vetch				15	15
ML-5805	Browntop millet		40			40
Seaside	Creeping bent	6				6
Garrison	Creeping foxtail	20		36		56
Emerald	Crownvetch	32	5	50		87
ML-4944	Daurica lespedeza	30	36		50	116
ML-9779	Illinois bundleflower		10		10	20
M2-10468	Partridgepea		15		39	54
Mich-430	Perennial pea	11	50	10	10	81
Ioreed	Reed canarygrass	13				13
M2-11406	Rush lespedeza		10		40	50
M2-11402	Sand lovegrass		2			2
Southland	Smooth bromegrass		10			10
ML-4877	Tall oatgrass	30	60		50	140
	Totals	<u>142</u>	<u>238</u>	<u>96</u>	<u>219</u>	<u>695</u>

Plants Furnished by the SCS

<u>Accession Number</u>	<u>Common Name</u>	1962		1963		<u>Total</u>
		<u>SCD</u>	<u>Other*</u>	<u>SCD</u>	<u>Other</u>	
ML-1100	Akebia	200				200
Chinese	Arborvitae		200			200
Mich-421	Autumn olive	600	400	300	3,150	4,450
Mich-777	Autumn olive	400				400
Korean	Barberry		500			500
Mich-697	Black alder		925			925
ML-6045	Black chokeberry		325			325
ML-5683	Black locust		25	100		125
ML-5786	Black locust			100		100
ML-5787	Black locust		25	125		150
ML-5788	Black locust			95		95
Mich-520	Blue arctic willow	100				100
Mich-428	Border privet	100				100
ML-5210	Forsythia hybrid				50	50
Amur	Honeysuckle	150	300			450
ML-4946	Japanese lespedeza	100				100
Mich-388	Medium purple willow	1,100	1,200			2,300
ML-5621	Memorial rose		1,000			1,000

*Other cooperating agencies such as Conservation Department and Purdue University.

Accession Number	Common Name	1962		1963		Total
		SCD	Other*	SCD	Other	
ML-6079	Natob lespedeza	100				100
ML-5852	Oriental photinia		725		125	850
Norway	Poplar		1,225		956	2,181
Robusta	Poplar		725			725
Siouxland	Poplar		100			100
Nye Branch	Scotch pine	1,500				1,500
Mich-488	Silky dogwood		425		600	1,025
Mich-389	Tall purple willow	1,100	1,200			2,300
Mich-689	Western sand cherry		100			100
Mich-484	White belle honeysuckle	100		300		400
	Totals	5,550	9,400	1,020	4,881	20,851

In Indiana there are the following approved projects:

1. Permanent pasture improvement.
2. Southern grown pasture grasses.
3. Gully and bank stabilization.
5. Upland game and waterfowl habitat.
6. Grass-legume observational nursery.
7. Streambank and shore erosion control.
8. Adaptation and use of Israel sweetclover.
9. Winter cover crops for erosion control.
10. Windbreaks for muckland.
11. Sandblow stabilization.

While some plant materials could be listed under more than one project, the primary purpose has been the deciding factor in assigning a planting to a specific project. Following is a summary of field plantings by project and area in Indiana:

Project Number	Number of Active Field Plantings by Area								
	1	2	3	4	5	6	7	8	Total
1	2	1					1	1	5
2				1		3	4	6	14
3	5	5	15	9	3	7	5	8	57
5	3	4	4	4	1	3	2	7	28
7			2	1	1	4	4	1	13
10		1							1
11	1								1
Total	11	11	21	15	5	17	16	23	119

*Other cooperating agencies such as Conservation Department and Purdue University.

While many of these plantings are too small to manage properly, consist of several materials or do not have a standard with which a logical comparison may be made, all serve as adaptation plantings relative to soil and climate factors. When any planting which has served its purpose has been observed by the PMT or when information is received that the planting has been destroyed, it will be closed out.

Cooperative Study - Quail Feeding Studies - Purdue

A feeding trial was set up by Dr. Kirkpatrick of Purdue University to determine the feeding value of certain seeds with quail. Part of the seed was furnished by the SCS and work was done by Thomas W. Hoekstra. Preliminary results were summarized in Forestry Special Report 498, Purdue University, May 22, 1963. This trial indicated performance when birds were forced to eat a diet of the test seed; but does not indicate the true value of these materials when present in the natural habitat.

The SCS furnished seed of the following:

1. Prostrate daurica lespedeza.
2. Showy partridgepea.
3. Illinois bundleflower.
4. Perennial vetch.
5. Bird vetch.
6. Rush lespedeza.

Crownvetch, sorghum (milo) and a breeder mash were also included in the tests.

Each bird was fed 10 grams of seed or mash per day. There was a slight variation between most seeds, possibly indicating a difference in feeding value. The important factor learned was that all birds eating Illinois bundleflower died. It is presumed that this is due to a toxic factor even though it was evident the birds did not like the bundleflower seed.

Based on this feeding trial Illinois bundleflower will not be used in any field plantings.

Notes on Materials in Field Plantings

These comments are based on results of plantings in Michigan and Ohio as well as Indiana. In many instances these plantings have raised questions for which answers are not presently available. Further information is needed showing the relationship of plant performance to soils.

1. Autumn olive may be used on a wide range of soils. Its most serious limitation is winter hardiness. Earlier plantings have been made from the non-hardy strains and regularly froze back to ground or snow line resulting in a poorly shaped bush with no fruit production. Its primary use is for wildlife food and cover, but it also may be used as a screen to divide recreation areas. Normally it would be compared with one of the bush honeysuckles. The hardy strain is being considered for inclusion as a recommended wildlife plant. Seed orchards are being established from which seed of the hardy strain can be obtained. Seed of the hardy selection has been furnished the Jasper-Pulaski State Nursery in the fall of 1963 in order that local production of the desirable strain can be initiated.
2. Black locust plantings were made primarily to find borer resistant strains. No strains have been found that are immune to borers. There is a difference in growth type and rate of growth. Some of these plantings were made in cooperation with other agencies. Black locust does well on some spoil areas that are not extremely acid, but the presence of the borer and leaf miner leaves a stand of little or no commercial value.
3. Chinese chestnut may have a place when treated as an orchard. The nuts are considered to be a delicacy by many. As a wildlife food plant it often has been disappointing. It does not appear to be

able to compete with invading woody material. If used, a high level of management appears to be necessary.

4. Christmas tree plantings were made from seed of known ancestry when interest in growing Christmas trees was at its peak. The purpose was to determine if any of these selections were better than commercial with regard to winter color, tree shape and needle length. As other people are working intensively on this problem, we will continue to evaluate present plantings until harvest. No new plantings will be made.
5. Emerald crownvetch has been accepted for use on limestone and limestone derived soils for bank stabilization. It is slow to become established, but once established provides an excellent cover. Its present use is to determine its value as a pasture legume on these soils in southern Indiana where satisfactory pasture legumes are limited. First indications are that it has real promise but that grazing management is essential to keep from overgrazing it. There are many unsolved problems of establishment on rough stony sites where use of equipment is limited. Certain fertility needs must be met.
6. Garrison creeping foxtail has often been planted on soils that are too well drained. When other grasses beside reed canary will yield well and not flood out, there is little purpose in planting this grass. We know it as an excellent pasture plant. Wet sites plus the fluffy nature of the small seed make seeding difficult. Once established, with proper grazing, this grass is an excellent wetland pasture. This is still considered to be a trial plant on wet sites that would normally be considered suitable for reed canary.

7. The Lespedezas:

- a. Japan lespedeza is a shrub type. Acid soils that have not been limed often produce small, weak plants. At times liming has made the difference between a dense stand and a failure. In the northern part of Indiana seed production is limited but a fair crop is produced in southern Indiana. On soils where adapted a stand can become too thick for hunting. This plant appears worthwhile but there is no commercial source of seed. Plantings on wildlife areas continue to be evaluated.
- b. Natob, variety of L. bicolor, is a woody lespedeza that doesn't die-back to the ground every winter. It may grow to 8 to 10' tall. Natob produces seed further north than does regular bicolor. It is good cover for wildlife but seed production is limited, especially in the northern half of Indiana. Evaluation on this variety continues.
- c. Prostrate daurica lespedeza is one of the more palatable lespedezas. It is readily accepted by cattle. It is slow to become established. It is being tested for suitability as a pasture legume in southern Indiana. It is extremely sensitive to frost, with all growth ceasing at the first light frost. Field plantings will continue. We know it will grow well under a high level of management. We hope that its fertility requirements will not be as high as for alfalfa. The real question remains, is it an economical addition to those pastures where a complete fertility maintenance program cannot be achieved?

8. Reed canary. Commercial strains are available for use in extremely wet areas. Some growers consider these pastures valuable when properly

managed. A dwarf selection is being tried to determine if ample erosion control can be obtained without excessive topgrowth characteristic of the commercial material. Does it have a place on the pool side of water detention reservoirs where there are extreme variation in the water table?

9. Seaside bent is a wetland plant that will partially float on water and will tolerate wet soils. It will not survive dry soils, prolonged flooding, 24-D or 245-T. On ditch bottoms and seeps that are usually wet and on pond edges with a constant level this plant forms a blanket that effectively controls erosion. Consideration is being given to include this plant in the standards.
10. Willows. Medium and tall purple willow have been tried with considerable success for use as windbreaks on muckland. Plantings on spoil areas have been disappointing. Apparently willow is sensitive to soil reaction. Further information on this will be obtained. Trials on streambank have indicated they cannot protect banks against severe cutting like one would find on a curve of a large stream. On less severe locations they have provided erosion control. A limited number of plantings will continue to be made.

The attached list of active field plantings is for the purpose of letting SCS and cooperating personnel know where plantings are located. It is expected that some will want to observe and become acquainted with nearby plantings.

List of Active Field Plantings as of December 31, 1963

Project I - Permanent Pasture Improvement.

<u>Area</u>	<u>District</u>	<u>Farmer</u>	<u>Date Estab.</u>	<u>Notes</u>
*1	St. Joseph	Victor Berger	5/20/61	Empire trefoil & Sm. brome.
*1	St. Joseph	Louis Lineback	?	Trefoil.
2	Kosciusko Co.	Bill E. Langoht	6/4/63	Garrison foxtail.
*7	Harrison	Stauth Bros.	4/23/56	Sericea with grass.
*8	Dearborn	Loren Huddleston	4/6/61	Crownvetch plus grasses.

Project II - Southern Grown Pasture Grasses.

*4	Clay	Max Schroer	8/29/58	Orchard grass & tall fescue remaining.
*6	Gibson	Geo. Ripple	8/11/60	Sand love & Blackwell switch best.
*6	Spencer	John Kruse	9/28/60	Southland brome.
*6	Warrick	William Bond	3/19/57	Tall fescue & brome remaining.
*7	Harrison	William Felton	9/4/58	Mainly bromes & orchardgrasses.
*7	Perry	Walter Werner	5/3/57	Fescue, orchard, bromes, tall oat.
*7	Washington	Joe Scifres	5/20/56	Creeping foxtail.
*7	Washington	Charles R. Williams	5/8/57	Orchard, fescue, tall oat & brome.
*8	Bartholomew	Eugene Adams	4/24/57	Fescue, oatgrass, orchard & brome.
*8	Bartholomew	Freeman Peek	4/13/59	Tall oatgrass & brome.
*8	Dearborn	Louis Landrum	8/-/59	Mixed grasses & BFT.
*8	Ripley	C. P. Broughton	3/27/60	Brome & Reed canary.
8	Switzerland	Eldric Hazeldean	5/6/59	Grasses & legumes.
*8	Switzerland	Paul Lamkin	3 & 4/60	Grasses & L. daurica.

Project III - Gully and Bank Stabilization.

*1	Fulton	Irene Rouch & Robt. Herrold	6/14/57	Open ditch bank.
*1	Jasper	Otto Hunt	4/11/55	Open ditch bank.
*1	Lake	Guy Slaughter	9/7/56	Pond fill.
*1	Newton	Don Smart	5/2/55	Open ditch bank.
*1	Pulaski	Alfred Housinger	4 & 5/55	Open ditch bank.
*2	Adams	H. Franz	5/9/56	Open ditch bank.
*2	Adams	Winfred Gerke	5/3/57	Steep ditch bank.
*2	Adams	Wilbur Selking	5/9/56	Open ditch bank.
2	Allen	Von Miller	5/17/56	Road cut.
2	DeKalb	Neil Prentice	5/1/57	Diversion channel.

*No evaluation made in 1963.

Project III - Gully & Bank Stabilization.(continued).

<u>Area</u>	<u>District</u>	<u>Farmer</u>	<u>Date</u> <u>Estab.</u>	<u>Notes</u>
*3	Boone	Wyatt Smith	4/28/60	Crownvetch - open ditch.
*3	Carroll	County Highway	4/17/59	Road cuts.
*3	Cass	D. Wildermuth	4/22/60	Road Bank.
*3	Fountain	Boy Scout Camp	4/13/55	Road Bank.
*3	Fountain	Robert Cross	4/6/60	Open ditch.
*3	Fountain	Lloyd Dove & G. Ratcliff	3/26/59	Open ditch bank.
*3	Fountain	C. Loeb & R. Woodrow	8/21/59	Open ditch bank.
*3	Miami	W. Frank Stoner	4/6/56	Ditch banks, crownvetch.
*3	Montgomery	Worley Meyers	5/20/60	Open ditch.
*3	Tippecanoe	John T. Conrad	6/10/55	Sandy soil - switchgrass.
*3	Tippecanoe	Homer Eavey	9/22/59	Open ditch bank.
*3	Tippecanoe	Ida Sessions	5/2/57	Shaded gully area.
*3	Tippecanoe	Frank W. Taylor	4/6/56	Road banks.
*3	Tippecanoe	Kenneth H. White	4/4/59	Crownvetch in shade.
*3	Warren	Lee Rhode	4/25/60	Crownvetch - open ditch.
*4	Clay	Cutshall & Eppert	4/19/60	Spoil banks.
*4	Hendricks	Phil Cole	4/20/57	Open ditch bank.
*4	Hendricks	Frank Freeman	5/8/59	Open ditch bank.
*4	Johnson	C. E. Norton	4/4/58	Open ditch bank.
*4	Morgan	C. D. Downey	4/27/55	Around pond.
*4	Morgan	County Highway	4/21/55	Roadside cuts.
*4	Shelby	Carl Henke	3/26/59	Road cut.
*4	Vermillion	Craig Johnes	5/15/57	Pond fill & sides.
*4	Vigo	Gibault School	8/-/59	Borrow area.
*5	Madison	Paul Miller - Sisson	4/18/55	Open ditch bank.
*5	Wayne	S. B. Botsford	3 & 4/56	Ditch bank - crownvetch.
*5	Wayne	Jackson-Perkins	5/11/55	Open ditch bank.
*6	Daviess	Ira & George Doty	4/-/56	Gully planting.
*6	Dubois	Arnold Habig	56 & 57	Pond - crownvetch.
*6	Dubois	Raymond Knies	5/11/55	Roadside banks.
*6	Knox	M. C. Lucas	4/4/61	Bryantsburg black locust.
*6	Pike	Ayrshire Patoka Coal Co.	3/28/58	Spoil bank.
*6	Pike	Bryce Bottoms	4/14/55	Gullied area.
*6	Pike	Alfred Schmidt	4/14/55	Around pond.
*7	Martin	N.A.D. Crane	3/29/56	Magazine area - crownvetch.
*7	Martin	N.A.D. Crane	3/27/57	Gully - Kudzu.
*7	Orange	Paoli School	5/20/57	Steep Bank - Kudzu.
*7	Perry	Elwood Carter	3/29/56	Road cut & pond fill.
*7	Washington	Vern Fawbush	4/10/57	Pond fill.
8	Clark	Tom McCoy, Jr.	4/21/55	Road ditch banks.
8	Clark	R. F. Robertson	5/18/60	
8	Clark	Arthur Schnecter, Jr.	Spr. 56	Kudzu.
8	Clark	Marvin & Ottis Wright	5/11/62	Perennial sweet pea.

*No evaluation made in 1963.

Project V - Upland Game & Waterfowl Habitat.

<u>Area</u>	<u>District</u>	<u>Farmer</u>	<u>Date</u> <u>Estab.</u>	<u>Notes</u>
*1	Jasper	Lawrence Arnott-	5/4/61	Autumn olive.
		Robt. Lyons		
1	Newton	Willow Slough State	1955/61	Field evaluation planting.
		Fish & Game Area		
*1	Porter	Owen Biller	4/15/61	Autumn olive.
*2	DeKalb	E. E. Ludlow	5/27/57	With Dept. of Cons.
2	Kosciusko	Tri-County State	1956/61	Field evaluation planting.
		Fish & Game Area		
*2	LaGrange	E. E. Ludlow	5/26/57	With Dept. of Cons.
2	LaGrange	Murray Poyser	4/20/61	Autumn olive.
*3	Carroll	Ned Long	4/9/59	Black locust seed orchard.
*3	Cass	Western Beagle Club	1961	Mixed woody & herbaceous.
*3	Tippecanoe	Farm Credit Building	1961	Mixed autumn olive & others.
*3	Warren	Janeway & Greenwood	4/19/60	Black locust seed orchard.
*4	Clay	Hilton Smith	4/12/61	Autumn olive.
*4	Owen	Spencer Conserva-	4/7/61	Autumn olive.
		tion Club		
*4	Parke	Theron Chapman	4-8 & 15/61	Autumn olive.
*4	Vermillion	Ferguson Rec.Park	5/-/61	Autumn olive.
		Inc.		
*5	Blackford	N. Ray Reed	4/4/61	Autumn olive.
*6	Daviess	Glendale State Fish	Spr.58/61	Woody stock only.
		& Game Area		
*6	Knox	Paul Harting	4/13/61	Autumn olive.
*6	Pike	Pine Farms, Inc.	4/4/61	Autumn olive.
*7	Brown	Happy Hollow Camp	4/8/61	Autumn olive & others.
*7	Orange	William Hutcheson	4/9/61	Autumn olive.
8	Clark	Earl Neal	4/18/61	Autumn olive.
8	Clark	George Verteas	4/1/61	Autumn olive.
*8	Clark	Bernard Wessel	4/1/61	Autumn olive.
*8	Dearborn	Dr. W. D. Gatch	5/3/60	A. O. & B. L. Woody stock.
*8	Dearborn	Julius McCool	5/6/61	Autumn olive.
*8	Dearborn	John Seevers	5/7/59	On Fairmount soils.
8	Jennings	Crosley State Fish	1958/60	Field evaluation.
		& Game		

Project VI - Grass-Legume Observational Nursery.

No active plantings under this project.

*No evaluation made in 1963.

Project VII - Streambank & Shore Erosion Control.

<u>Area</u>	<u>District</u>	<u>Farmer</u>	<u>Date</u> <u>Estab.</u>	<u>Notes</u>
*3	Carroll	Ben Been	4/17/59	Reed canarygrass.
*3	Carroll	Don Fellows	5/12/60	Willow & canarygrass.
*4	Shelby	Carl Henke	3/26/59	Creeping bent on pond.
*5	Fayette	Robert L. Hurst	4/16/59	Purple willow.
*6	Knox	Paul Herting	4/-/58	Creeping bent on pond.
*6	Posey	Raymond Willman	Spr. 58	Creeping bent on pond.
*6	Spencer	W. S. Beardsley	4/10/57	Creeping bent on pond.
*6	Warrick	E. K. Hocker	3/28/58	Creeping bent on pond.
*7	Martin	N.A.D. Crane	3 & 5/56	Reed canarygrass.
*7	Perry	Elwood Carter	5/1/57	Creeping bent on pond.
*7	Perry	St. Meinrad Abbey Farms	4/-/56	Willows.
*7	Washington	Ind. Dept. of Cons. Str. #1 Elk Creek Watershed.	9/13/61	Ioreed Canarygrass
8	Clark	Bob Couch	10/27/57	Creeping bent on pond.

Project X - Windbreaks for Muckland.

2	Kosciusko	Glen L. Treesh	5/3/62	Willow, privet & honeysuckle.
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Project XI - Sandblow Stabilization.

*1	Jasper	Dankhe & Guy Madsen	4/29/60 & 5/30/61	Volga wildrye & others.
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